What is Stewardship?

The Imperative for Collaboration

José-Marie Griffiths, Ph.D. • STM Conference • • Washington, D.C. • April 30th, 2014

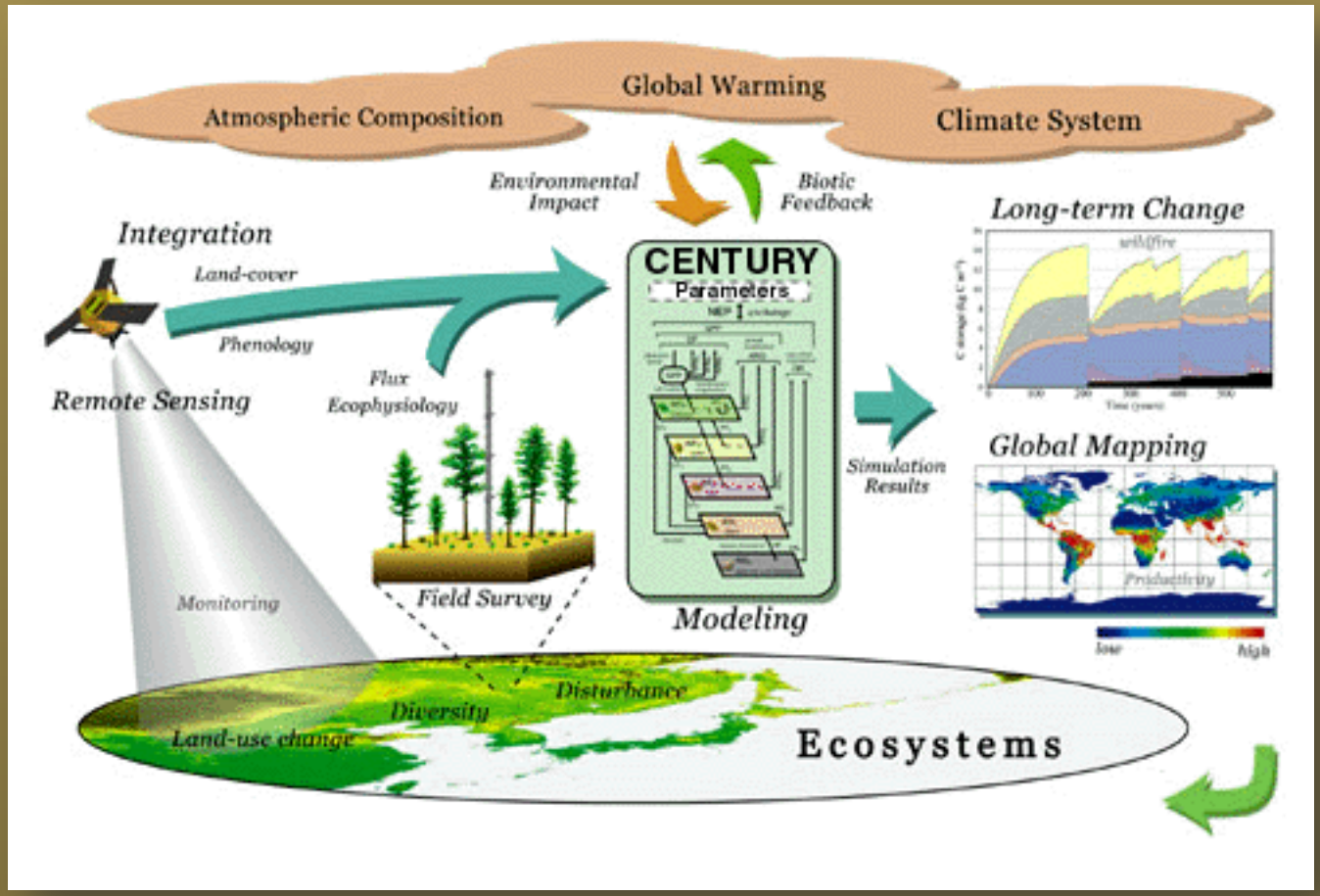
Stewardship – the word defined

- Miriam Webster*: "the careful and responsible management of something entrusted to one's care"*
- Dictionary.com: *"the responsible overseeing and protection of something considered worth caring for and preserving"*
- International standard ISO 20121: *"responsibility….reflected as both a value and a practice by individuals, organizations. communities, and competent authorities."*
- *"... an ethic that embodies the responsible planning and management of resources. The concepts of stewardship can be applied to the environment, economics, health, property, information, theology, etc...Stewardship is now generally recognized as the acceptance or assignment of responsibility to shepherd and safeguard the valuables of others."*

A Knowledge Ecosystem

Ecosystem Stewardship –

a model to explore for understanding Knowledge Stewardship



http://www.cometvr.colostate.edu/images/ecosystem.gif

Ecosystems

- **Components: abiotic (non-living), biotic (living)**
- **Study of an ecosystem = the study of processes that link biotic and abiotic elements**
- **Ecosystem stewardship**: try to understand the system as a whole
  - **Energy flows**
  - **Materials cycles**
  - **Controls on ecosystem functions** (bottom-up, top-down)

Ecosystem Components - Abiotic

Ecological Ecosystem	Knowledge Ecosystem
Substance	
Elements: sun; temperature; precipitation, etc.	Source content: original sources, secondary sources, etc.
Higher Level Compilations	
Grouped elements: Radiation levels - e.g., sum of sun penetration, soil minerals, etc.; Climate – e.g., combined impact of temperature levels over time, etc.	Catalogued/edited higher level **managed knowledge**– e.g., libraries, encyclopedias, metadata libraries, propaganda etc.

Ecosystem Components – Abiotic 2

Ecological Ecosystem	Knowledge Ecosystem
Storage	
Elements stored in the environment (e.g., minerals in the soil, radiation in the sun)	Containers of knowledge: people, cultural heritage, language, art, printed word, etc.
Distribution	
Storms for bringing moisture; sun's rays for delivering radiation, etc.	Spoken word - language, storytelling, plays, etc.; visual knowledge – museums, architecture, etc.; printed word— books, journals, etc.
Level and Availability	
Varies from time to time, area to area	Varies from time to time, area to area

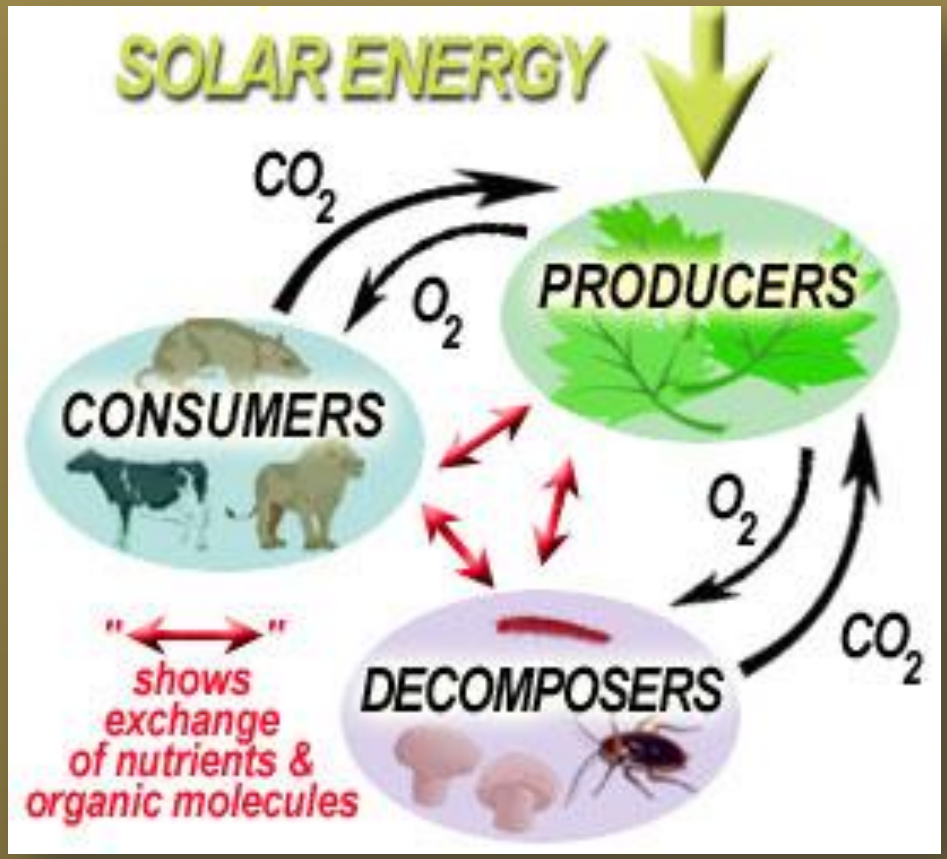
The Bottom Line

- **All abiotic components:**
  - **Substance**
  - **Higher level collections**
  - **Storage system**
  - **Distribution system**

  MUST still continue to exist some form or the ecosystem will become nonfunctional — species will become extinct, etc.

Ecosystem Components - Biotic

In an ecosystem, functional groups of organisms that perform mostly the same kind of function (focused on FUNCTION not species) or the ROLES that organisms play in the ecosystem
In an ecological ecosystem we identify:



http://www.bigelow.org/bacteria/land.jpg

Knowledge Ecosystem Components - Biotic

- **Producers**
  - **Authors**: Researchers, Scholars
  - **Knowledge organizers** – e.g., catalogers, metadata creators, library collections
  - **Funders** – federal, state, local, foundations – seed producers
  - **Validators**– colleges/university, corporate and federal R&D
  - **Publishers**
- **Consumers**
  - **Readers**
  - **Publishers**
  - **Libraries**
  - **Authors/researchers**
- **Decomposers**
  - **Validators**
  - **Funders**
  - **Knowledge organizers**
  - **Publishers**
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Ecosystem Web

- Illustrates the feeding **relationships among species** within a community
- Reveals **species interactions** and **community structure**
- Way of understanding the **dynamics of energy and resource transfer** in an ecosystem

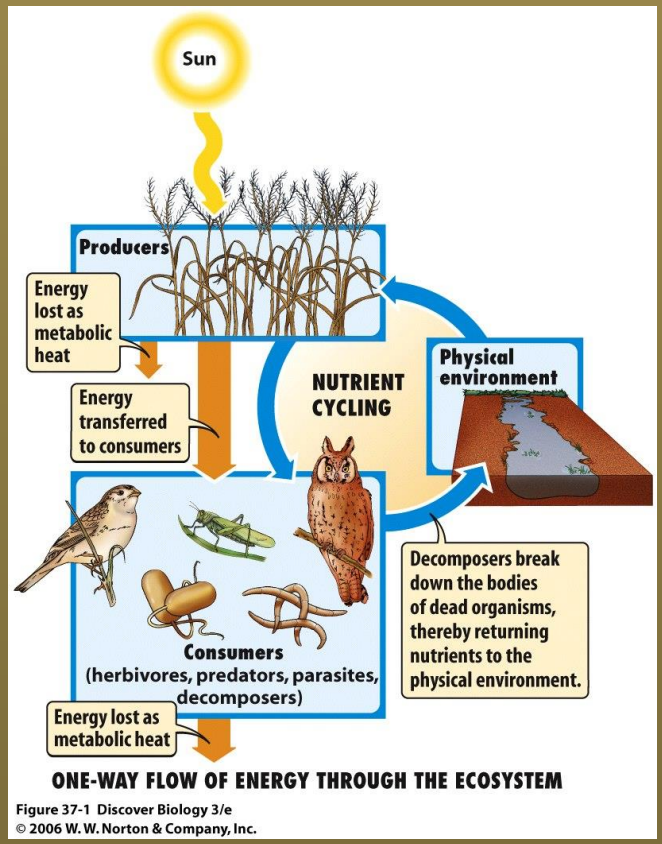
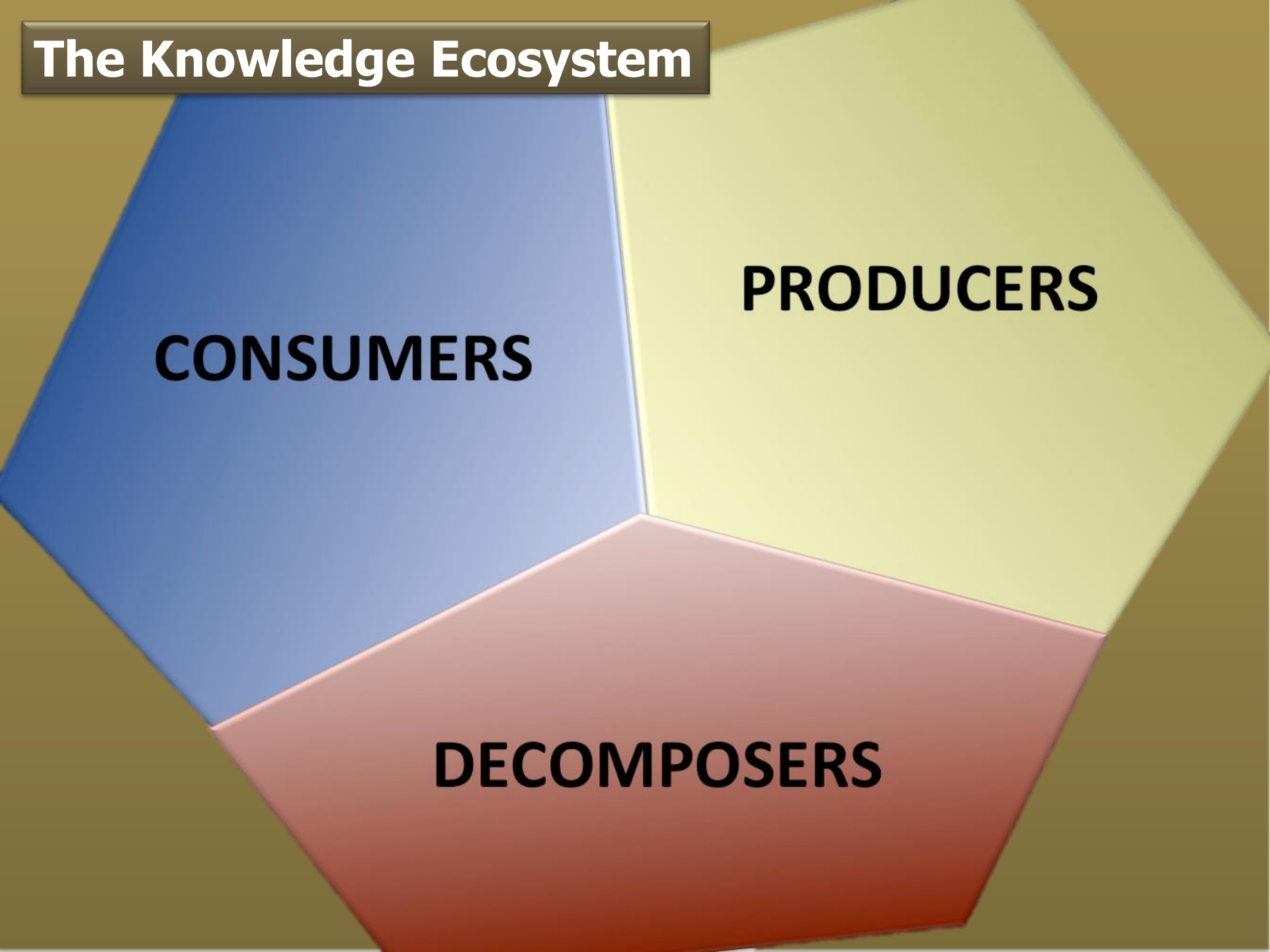
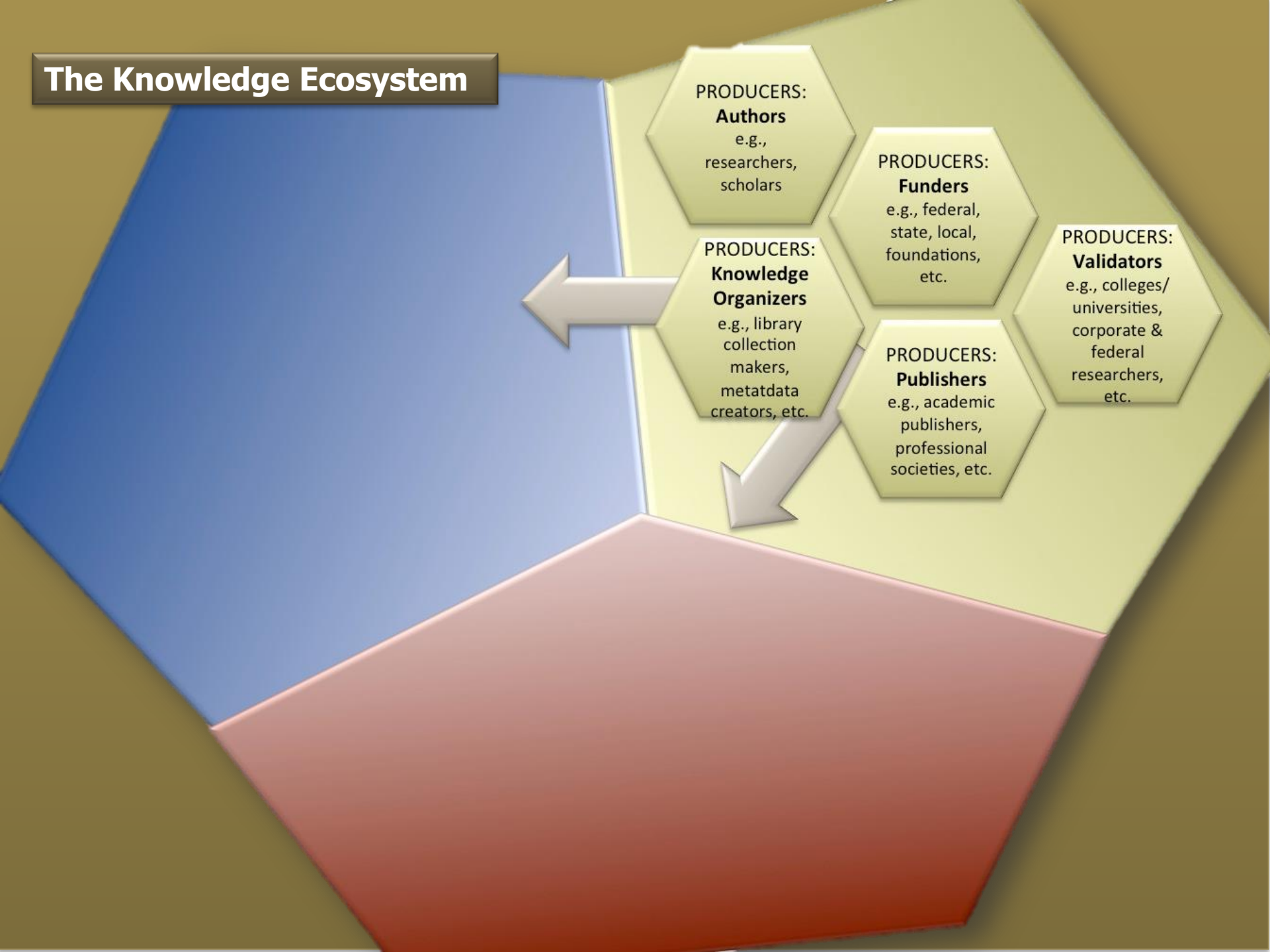


Figure 37-1 Discover Biology 3/e

The Knowledge Ecosystem



The Knowledge Ecosystem



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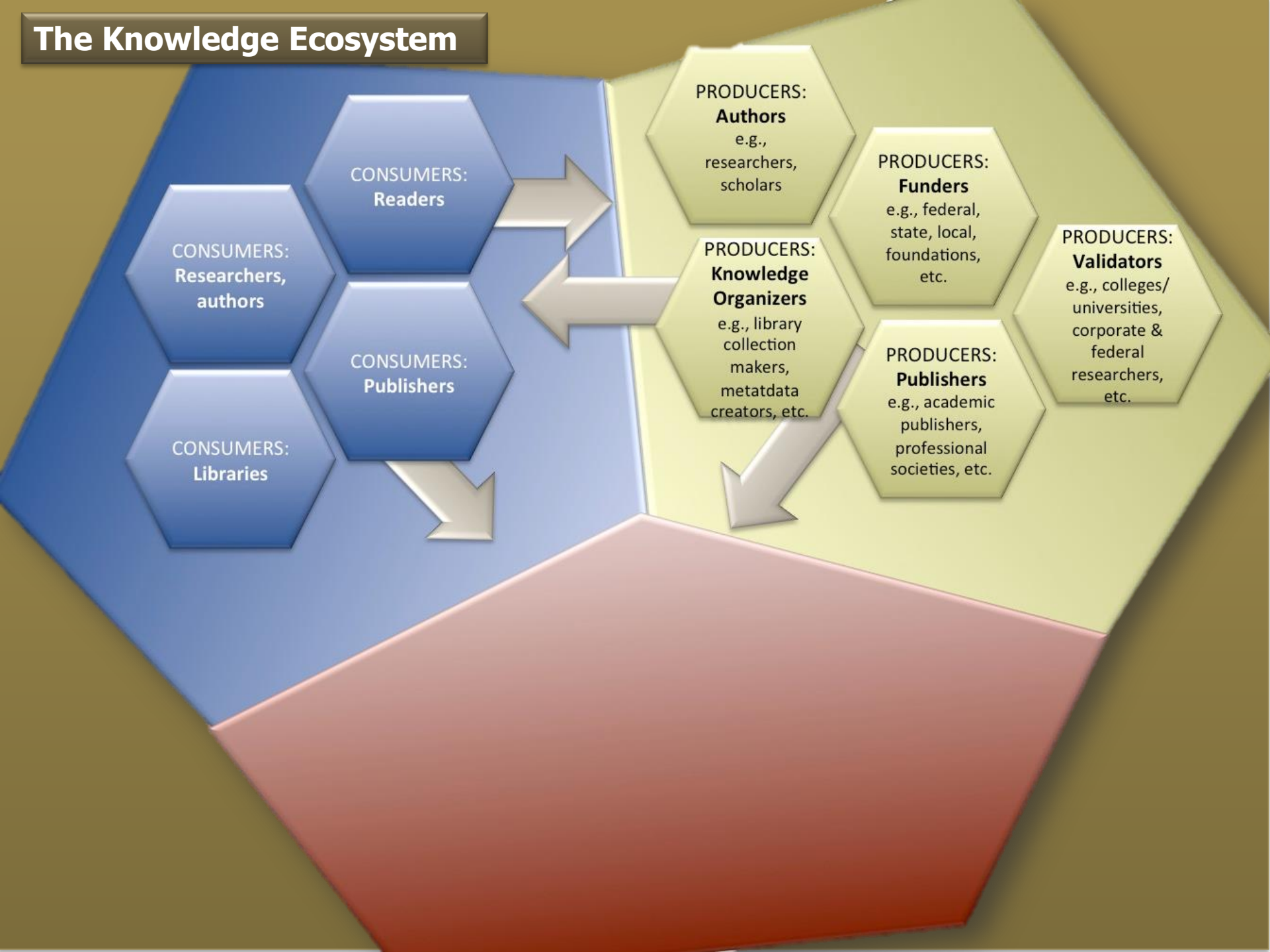
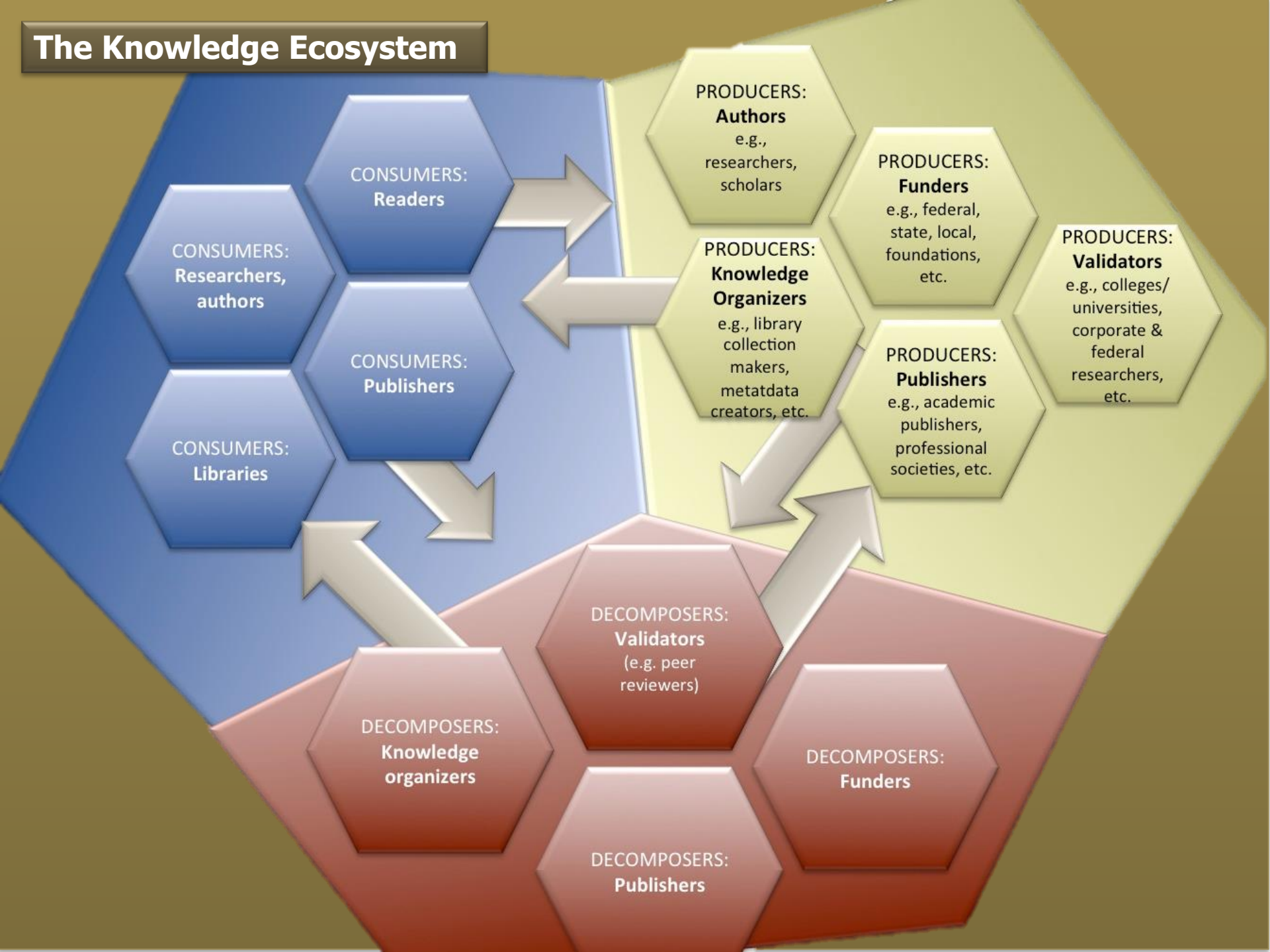
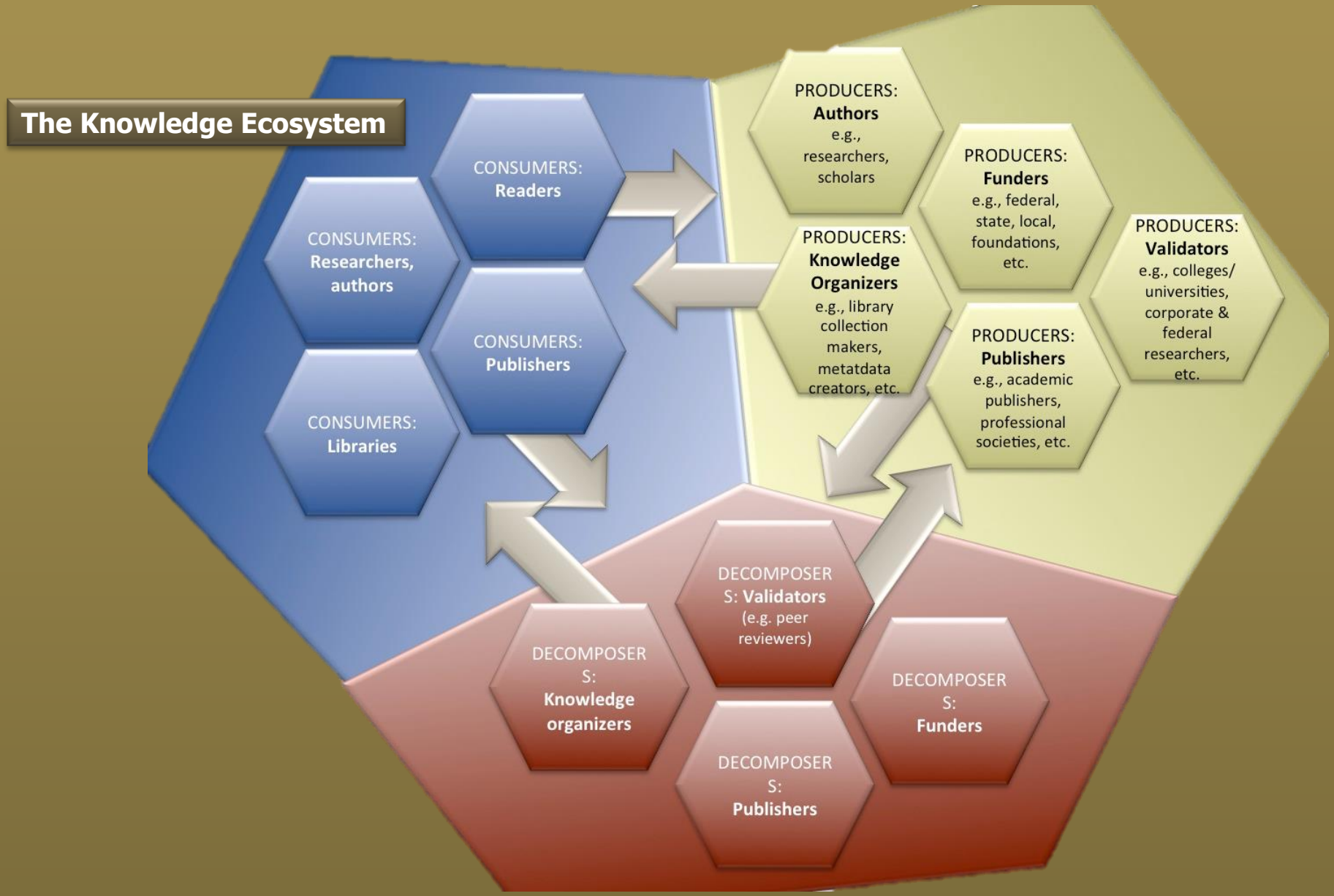


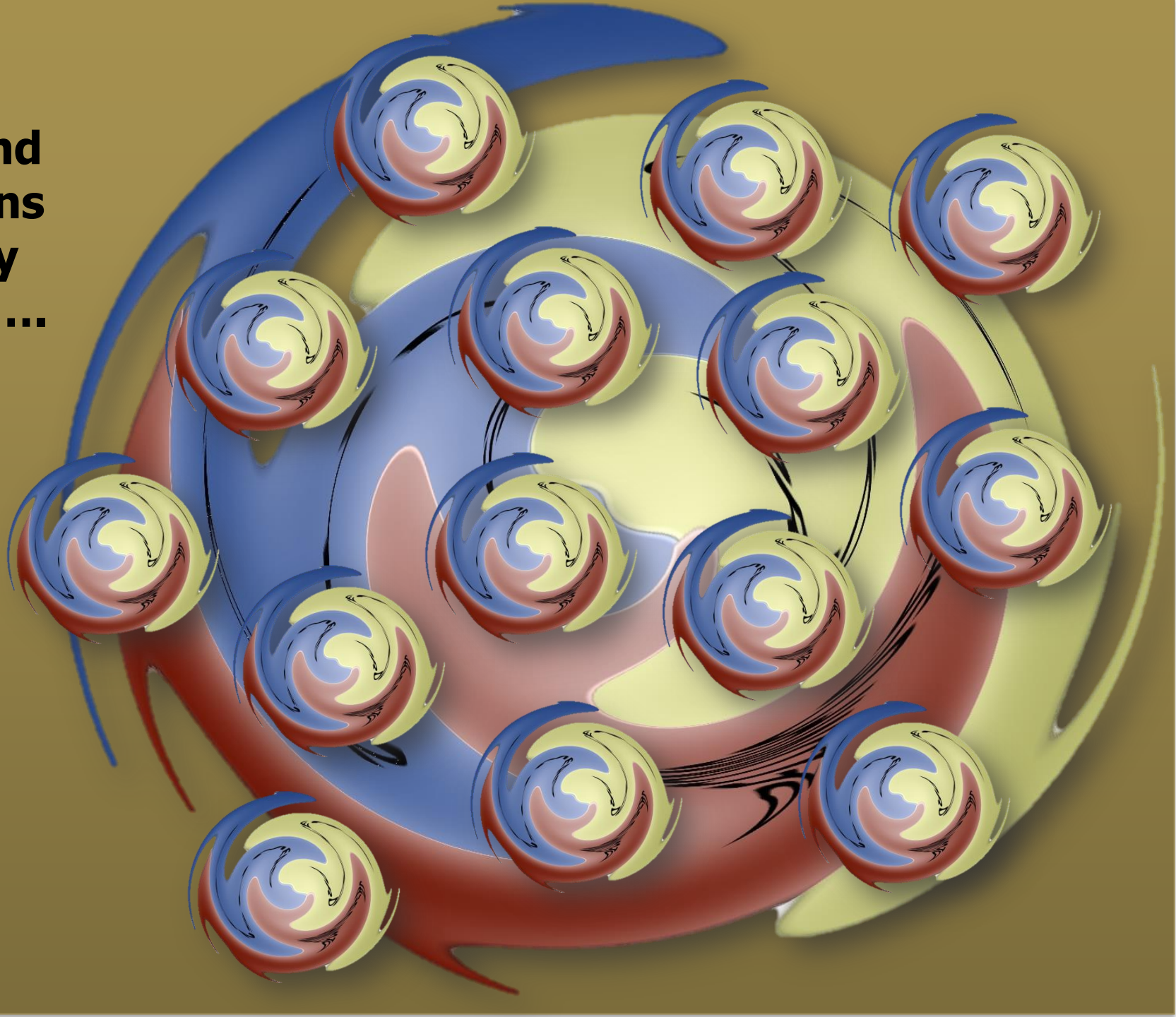
The Knowledge Ecosystem



For approximately the past century the functions and roles in the Knowledge Ecosystem have been relatively well defined and clear.

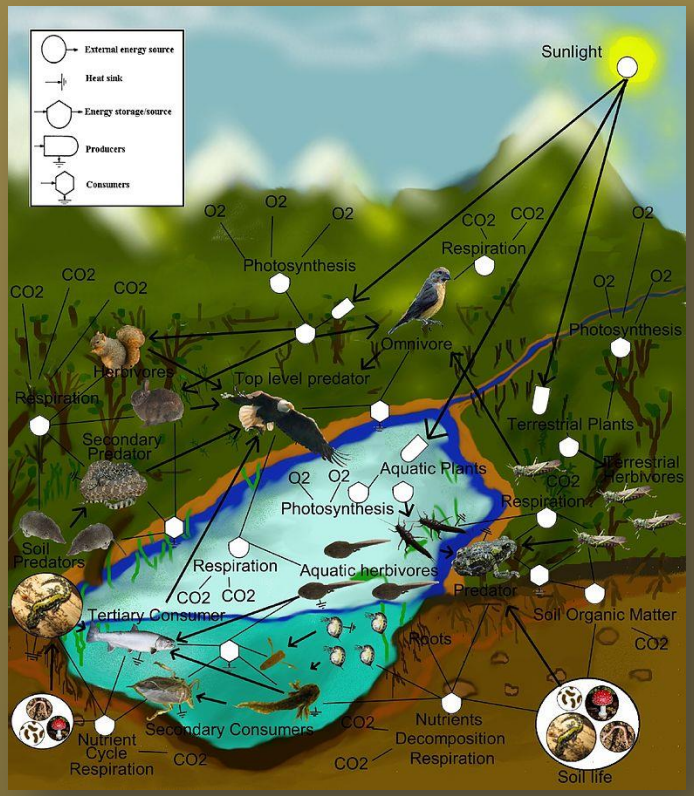


Now biotic roles and functions are very muddy….



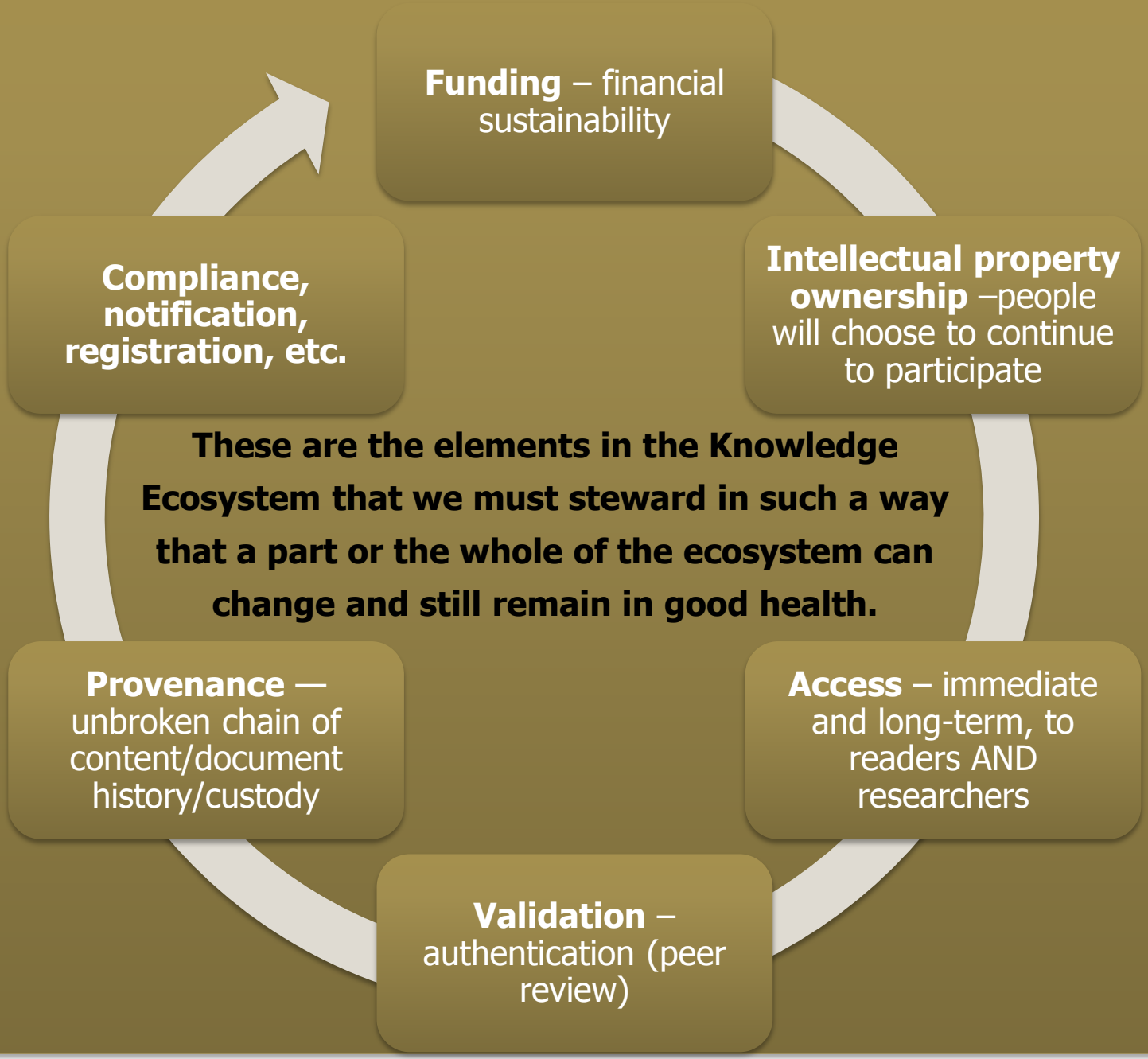
Ecosystem Web – element ratios

- What elements a part or the whole of an ecosystem can change and still remain in good health



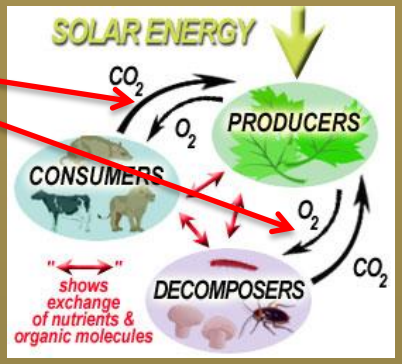
Ecological ecosystem example: multiple individuals, "organizations" and the entire ecosystem depend on an appropriate ratio of CO2 in the system

Knowledge Ecosystem Web – element ratios



Ecosystem Web – Element Cycling

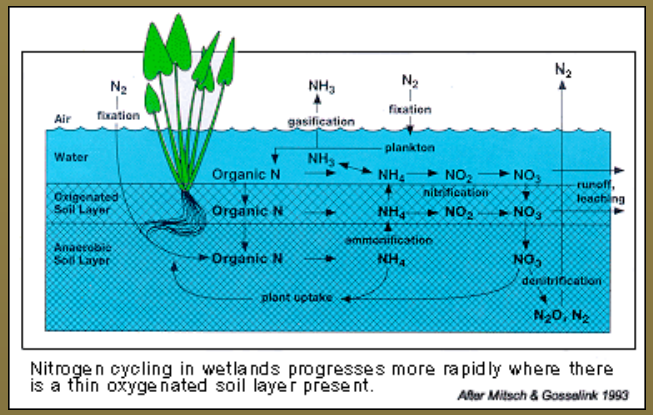
Where and how fast elements move in a system



www.bigelow.org

Closed system: the inputs and outputs are negligible compared to the internal changes (e.g., a terrarium)

Open system: there are inputs and outputs as well as the internal cycling



Nitrogen cycling in wetlands progresses more rapidly where there is a thin oxygenated soil layer present. *After Mitsch & Gosselink 1993*

- ***What becomes important is how long on average an element remains within the system before leaving the system***

Knowledge Ecosystem Web – element cycling

- What is important is how long on average an element remains within the system before leaving the system, e.g. funding
- Closed versus open systems – knowledge stewardship of the knowledge ecosystem has generally been a closed system
- Many research academic institutions think they can do the entire knowledge system stewardship by themselves – but if they do, they will suddenly have to financially support the cost of the entire system while removing multiple revenue streams from the system!

Authors are only 10% of the readers

What is the Future of Our Knowledge Ecosystem Stewardship?

A Scenario Approach

The Future of the Future

Lawrence Wilkinson:
Scenario Model

"Given the impossibility of knowing how the future will play out, a good decision or strategy is one that plays out well across several possible futures."

Individual vs. Community

Individual ⟷ Community

"Will the energy of democratization and the ascendance of the ultimate individualized "I" continue to prevail?"

"Or will our social organization and self-definition be rooted in a group—a nation, a tribe, a collection of users of a particular brand, a more communitarian 'We'?"

Neither the "I" nor the "We" will ever disappear, but it is a question as to which will become the prevailing influence in our society — or the portion of society which we support or with which we identify.

Knowledge – Market or Common Good?

Individual ⟷ Community

"Will the energy of democratization and the ascendance of the ultimate individualized "I" continue to prevail?"

"Or will our social organization and self-definition be rooted in a group—a nation, a tribe, a collection of users of a particular brand, a more communitarian 'We'?"

Knowledge as a Market Good ⟷ Knowledge as a Common Good

If a focus on the individual defines the future, then knowledge will turn into a market good.

Coherence vs. Fragmentation

Coherence

Fragmentation

"Will social and political structures (either new or traditional) provide a society-wide coherence and order? Will there be a state to impose order, level the playing field, and unify a commonwealth?"

"Or will society shatter into shards, the jagged edges of which do not mesh into a coherent whole? Will permanent fragmentation, increasing plurality, and unfettered free-marketism bring us to 'bottom-up' functioning anarchy?"

"Will society be the center that holds and provides stability, or will it fragment?"

Knowledge – Individual or Organizational Control

Organizational Knowledge Control

(top down)

Coherence

Fragmentation

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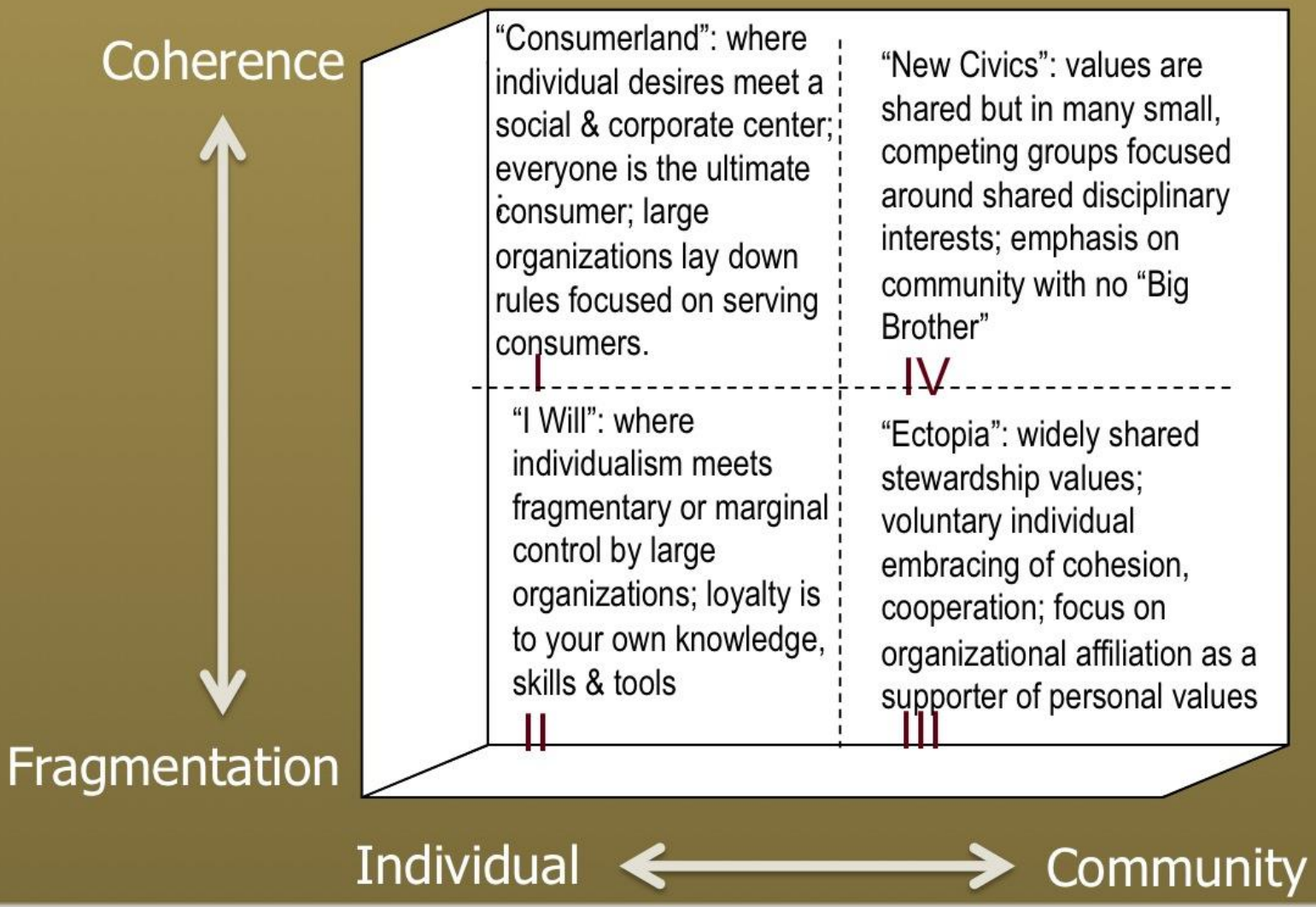
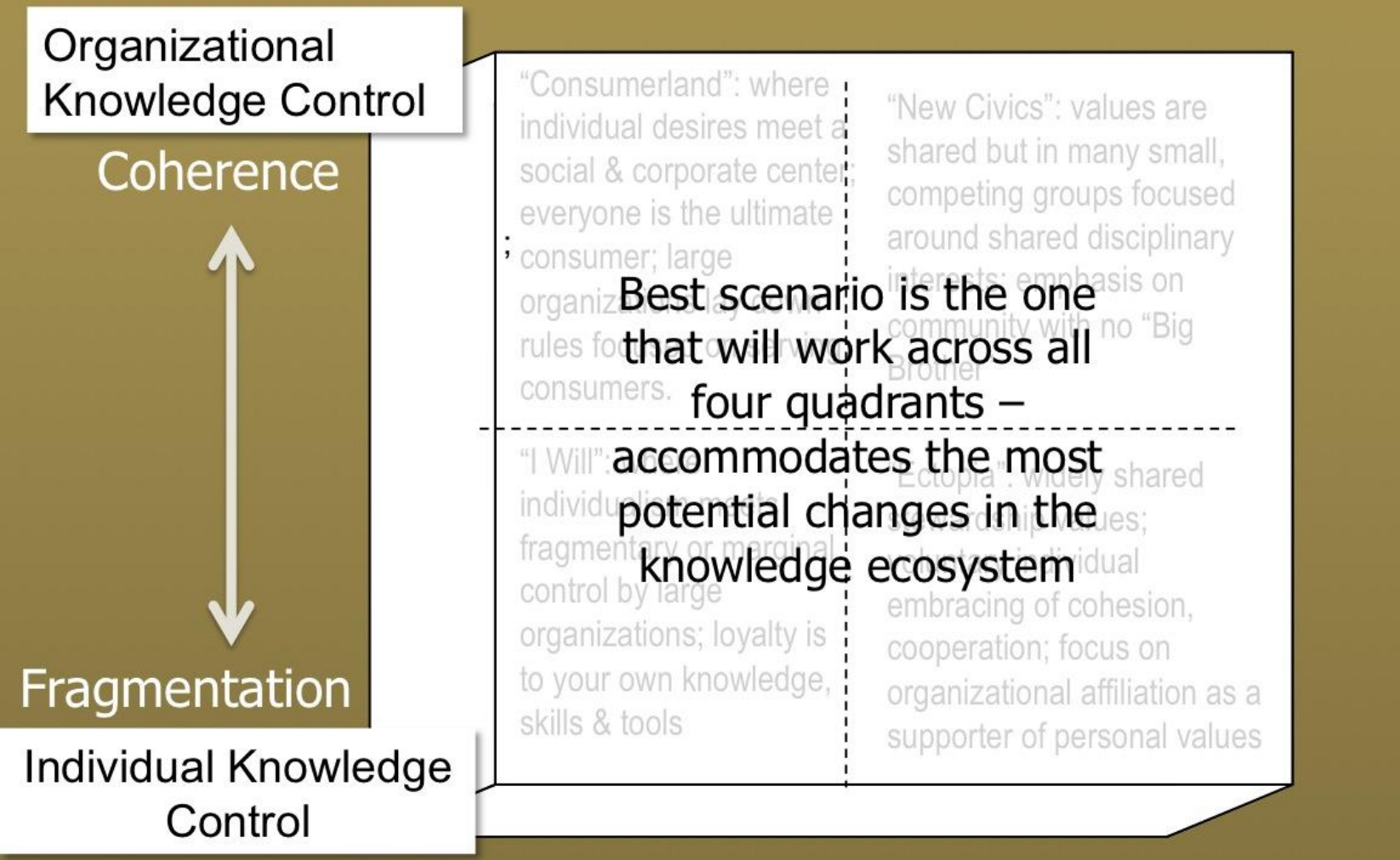
Individual Knowledge Control

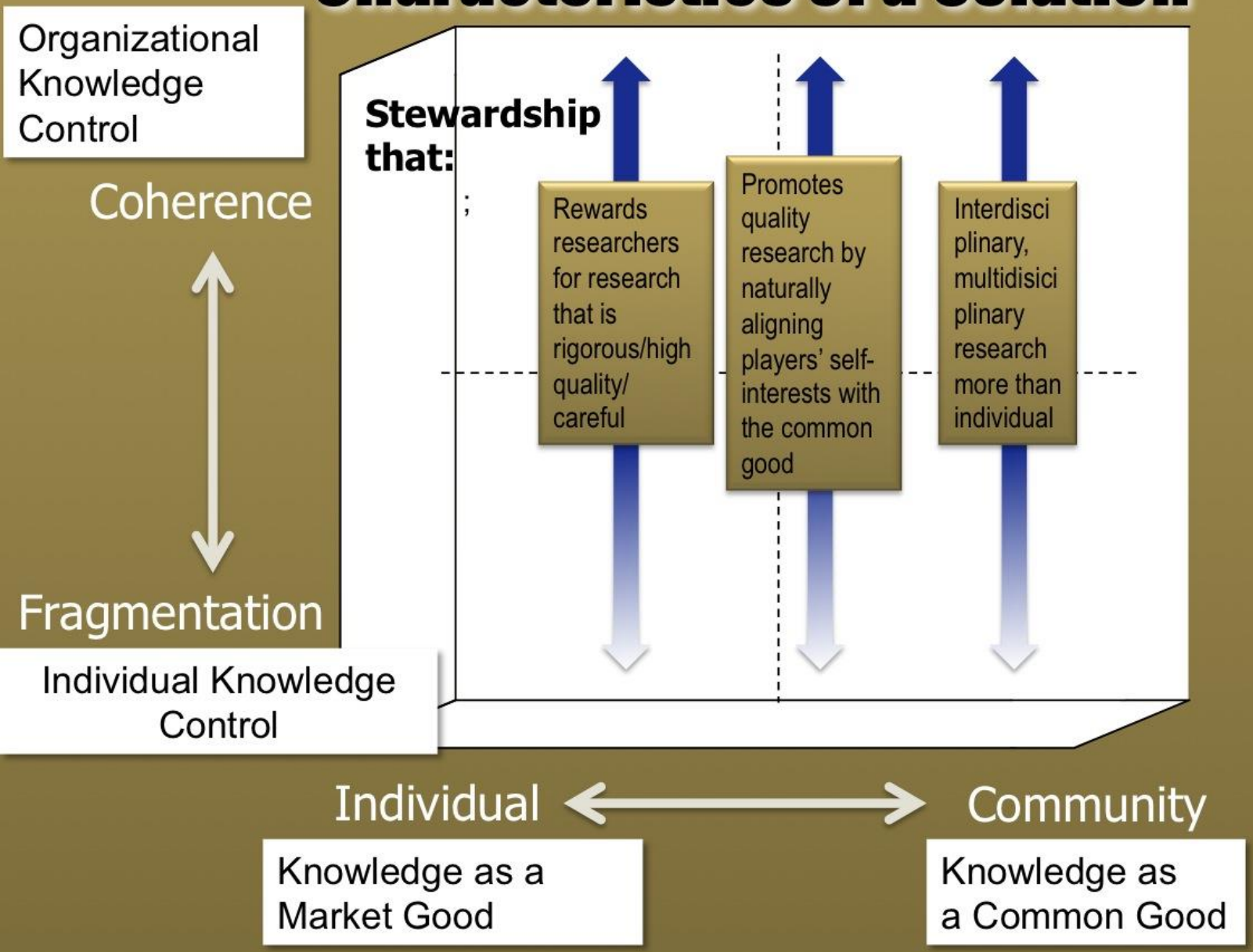
(bottom up)

Societal Options

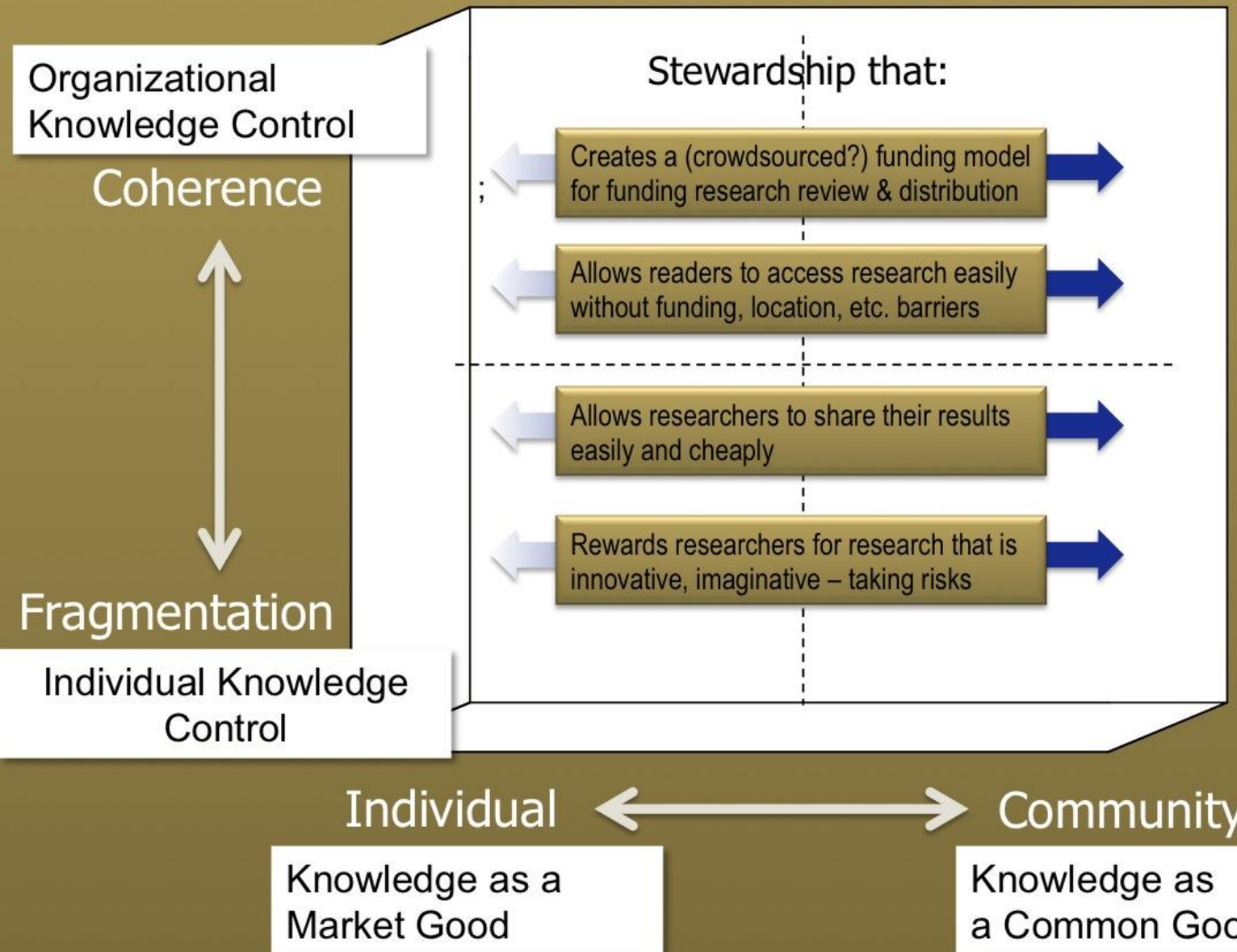



Organizational Knowledge Control
Coherence
Fragmentation
Individual Knowledge Control
"Consumerland": where individual desires meet a social & corporate center; everyone is the ultimate consumer; large organizations apply rules for consumers.
"New Civics": values are shared but in many small, competing groups focused around shared disciplinary interests; emphasis on community with no "Big Brother"
"I Will": individualistic; fragmentary or marginal control by large organizations; loyalty is to your own knowledge, skills & tools
embracing of cohesion, cooperation; focus on organizational affiliation as a supporter of personal values
Best scenario is the one that will work across all four quadrants – accommodates the most potential changes in the knowledge ecosystem
Individual
Community
Knowledge as a Market Good
Knowledge as a Common Good

Knowledge Ecosystem Stewardship: Characteristics of a Solution



Knowledge Ecosystem Stewardship: Characteristics of a Solution



A Possible Collaborative Process

1) **Agree** on the **ecosystem's top-line value/need**

Based on *The UpCycle: Beyond Sustainability – Designing for Abundance*, by William McDonough and Michael Braungart

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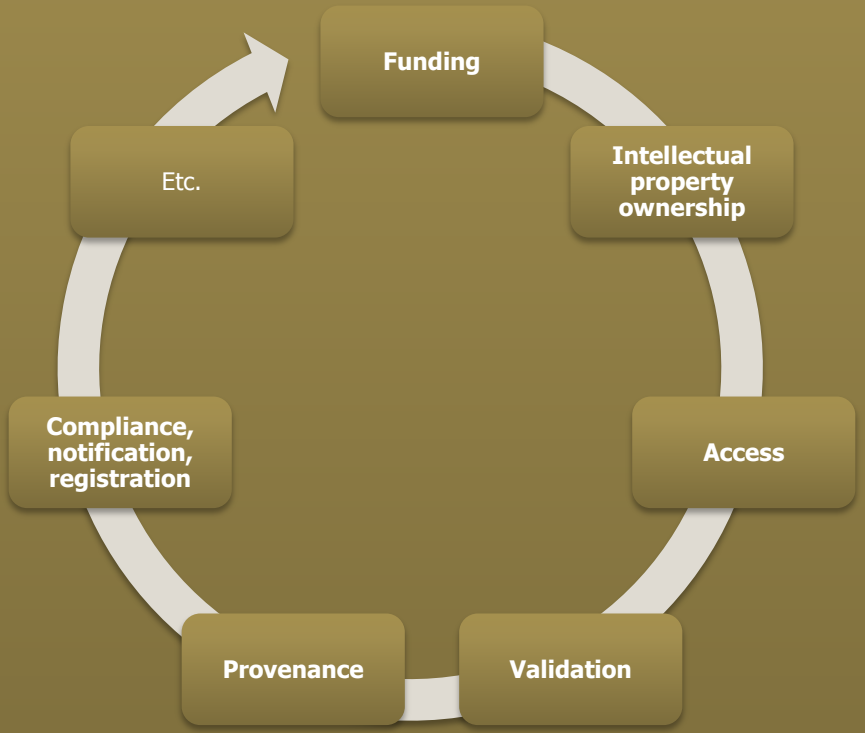
For the Knowledge Ecosystem – perhaps that this overall process of knowledge creation, sharing and preservation, and all its component elements, continues to function effectively and sustainably?



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1) **Agree** on the **ecosystem's top-line value/need**
2) **Identify** each **participant's top-line value and/or need in each of their roles** (maintain the abiotic and biotic elements in the ecosystem)

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PRODUCERS Participants	TOP-LINE VALUE/NEED
Authors: Researchers, Scholars	???
Knowledge organizers – e.g., catalogers, metadata creators, library collections	???
Funders – federal, state, local	???
Validators– colleges/university, corporate/federal	???
Publishers	???

CONSUMER Participants	TOP-LINE VALUE/NEED
Readers	???
Publishers	???
Libraries	???
Authors/researchers	???

DECOMPOSER Participants	TOP-LINE VALUE/NEED
Validators	???
Funders	???
Knowledge organizers	???
Publishers	???
Libraries	???

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3) **Commit to meeting and protecting the ecosystem and each participant's top-line values and needs** as you reconfigure the ecosystem (create a collaborative environment of trust)

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ESTABLISH TRUST

Based on *The UpCycle: Beyond Sustainability – Designing for Abundance*, by William McDonough and Michael Braungart

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3) **Commit to meeting and protecting the ecosystem and each participant's top-line values and needs** as you reconfigure the ecosystem (create a collaborative environment of trust)
4) **For each participant**, find an **approach** that will contribute to the **success of the ecosystem's top-line value/need AND** will **meet that participant's top-line value/need.**

Based on *The UpCycle: Beyond Sustainability – Designing for Abundance*, by William McDonough and Michael Braungart

PRODUCERS PARTICIPANTS	TOP-LINE VALUE/NEED	Strategy that meets BOTH participant & ecosystem needs
Authors: Researchers, Scholars	???	
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CONSUMER PARTICIPANTS	TOP-LINE VALUE/NEED	Strategy that meets BOTH participant & ecosystem needs
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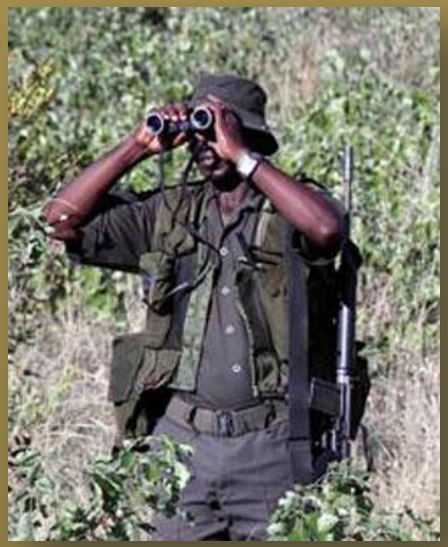
CONSUMER PARTICIPANTS	TOP-LINE VALUE/NEED	Strategy that meets BOTH participant & ecosystem needs
Validators	???	
Funders	???	
Knowledge organizers	???	
Publishers	???	

An Example: How to Cook and Educate Your Kids Without Killing a Tiger

An Example: How to Cook and Educate Your Kids Without Killing a Tiger - 2

An Example: How to Cook and Educate Your Kids Without Killing a Tiger - 3



An Example: How to Cook and Educate Your Kids Without Killing a Tiger - 4

An Example: How to Cook and Educate Your Kids Without Killing a Tiger - 5

“A boat doesn’t go forward if each one is rowing their own way.”
~ Swahili proverb

“If you want to go fast, go alone. If you want to go far, go with others.”
~ -African proverb

“Conflict is inevitable, but combat is optional.”
~ Max Lucado

José-Marie Griffiths, Ph.D.

Vice President for Academic Affairs

Bryant University - 1150 Douglas Pike - Smithfield, RI 02917

(401) 232-6061 - jmgriff@bryant.edu - josemarie@gmail.com